BACKGROUND & AIMS: Suspected acute ileitis (AI) is a poorly defined clinical condition with multiple causes; its diagnostic protocol has not been standardized properly. We performed a prospective evaluation of the incidence and causes of AI to create a standard protocol for diagnosis. METHODS: The definition of AI included abdominal pain, diarrhea, fever, and at least 1 confirmatory imaging method (abdominal computed tomography scan or ultrasound) showing pathologic changes in the terminal ileum that indicated ileal inflammation. We studied all patients with a presumptive diagnosis of AI seen in the Emergency Room at the Ramón y Cajal Hospital in Madrid, from March 2005 to May 2007, according to a pre-established protocol. Sixty-six patients with primary AI were followed up for at least 6 months. RESULTS: An infectious cause was found in 33.3% of cases; the most frequently detected microorganism was Yersinia spp. A gynecologic condition was identified in 9.1% of cases initially diagnosed as AI, representing 13.95% of the cases among female patients. Crohn’s disease was identified in 9.1% of cases initially diagnosed as AI, representing 13.95% of cases; the most frequently detected microorganism was Yersinia spp. A gynecologic condition was identified in 9.1% of cases initially diagnosed as AI, representing 13.95% of the cases among female patients. Crohn’s disease was identified in 9.1% of cases initially diagnosed as AI, representing 13.95% of the cases among female patients. The diagnostic protocol led to a definitive diagnosis of AI in more than 60% of potential cases. The most common cause was acute infection. About 10% of cases were of gynecologic origin and about 12% of patients presented with Crohn’s disease.

Some decades ago, patients consulting for acute RLQ pain preferentially were managed from a surgical point of view, prompting physicians to decide whether laparotomy had to be performed or not. Since then, different algorithms to evaluate RLQ pain have been elaborated. A typical current approach would include performing a urinalysis, a pregnancy test in fertile women, obtaining an imaging test, and waiting for 6 to 10 hours before re-evaluating and perhaps considering a surgical approach. Such stepwise evaluation is aimed at the reduction of unnecessary or white laparotomies, and its widespread adoption, together with the general availability of US and even CT in emergency departments, surely are responsible for the increasing identification of ileitis.

In the same way that different clinical situations can lead to RLQ pain, the causes of AI are many. Infections and infestations are a leading cause of true ileitis and are always the main differential diagnosis. Microorganisms, such as Yersinia enterocolitica, Campylobacter jejuni, Salmonella enteritidis, and Anisakis simplex, are the most frequent causative agents. Infections probably are underestimated as a cause of AI because of the delayed onset of diarrhea in many cases of RLQ pain, and because of the frequent false-negative results of stool cultures. The self-limited nature of such conditions and the lack of microbiologic studies in emergency units also may account for the reduction in the final diagnosis of infectious AI. It is important to keep in mind the possibility of an inflammatory bowel disease (IBD), more specifically Crohn’s disease (CD), when evaluating a case of AI; it has been published that up to one third of new-onset CD patients suffer an episode clinically classified as AI. Another important cause is nonsteroidal anti-inflammatory drug (NSAID) therapy.

The information on causes and diagnostic work-up of AI is scarce, and does not correspond to a condition that presents many caveats. The first potential pitfall would be, of course, to resort unnecessarily to surgical abdominal exploration. Another important one is to withhold antibiotic therapy in patients who readily can be treated and who tend to have a protracted course if they are not treated. Finally, the diagnostic work-up, if not

**Abbreviations used in this paper:** A&E, Accident & Emergency Department; AI, acute ileitis; CD, Crohn’s disease; CT, computed tomography; ESR, erythrocyte sedimentation rate; IBD, inflammatory bowel disease; Ig, immunoglobulin; NSAID, nonsteroidal anti-inflammatory drug; RLQ, right lower quadrant; US, ultrasound.

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standardized, could include unnecessary, expensive, and invasive tests. It is of special importance to keep in mind that a patient with AI could be diagnosed falsely with CD, with the logical personal and medical connotations.

Confronted with an increasing number of suspected ileitides, and being unable to approach their diagnosis in a reasonable and sensible manner, we decided to design an evaluation protocol of cases of AI. Our main objectives were to describe the incidence and clinical presentation of the condition, to determine its main causes, and to select and create a hierarchy of tests necessary for its diagnosis.

Methods

Subjects and Protocol

Our study was approved by the Ethics Committee of the Ramón y Cajal University Hospital, a referral academic center in Madrid, Spain, whose emergency department has a catchment area of around 400,000 adults northeast of Madrid.

All cases seen in the Accident & Emergency (A&E) Department from March 2005 to May 2007, with a final diagnosis of AI, were seen by a member of our department (gastroenterologist on duty) and evaluated immediately for discharge or admission (depending on the clinical situation), and for possible inclusion in the study protocol. Some of the cases had been seen by surgeons, and a diagnosis had been reached by explorative laparoscopy or laparotomy.

Exclusion criteria for the diagnostic protocol were as follows: presentation in the A&E Department, as opposed to nonurgent evaluation in our outpatient clinic; acute clinical picture compatible with AI (RLQ pain, together with fever and/or diarrhea) in the past week; and pathologic changes in the terminal ileum, suggestive of ileal inflammation, evidenced by US and/or CT; alternatively, direct inspection of an inflamed ileum was accepted in cases undergoing abdominal surgical exploration.

Exclusion criteria were as follows: a previous diagnosis of IBD, untreated tuberculosis or lymphoma; previous abdominal radiotherapy; known human immunodeficiency virus infection; pregnancy; and previous ileal resection.

Informed consent was obtained for a set of tests ordered in a sequential fashion. Some of the tests were not performed, depending on clinical characteristics and the evolution of a given patient, and on whether or not a diagnosis had been reached.

All patients were asked about epidemiologic aspects: dietary exposure during the previous week (raw fish, eggs, or sauces), recent travel to countries with poor sanitary conditions, exposure during the previous week (raw fish, eggs, or sauces), and whether or not a diagnosis had been reached with the first set of tests).

Informed consent was obtained for a set of tests ordered in a sequential fashion. Some of the tests were not performed, depending on clinical characteristics and the evolution of a given patient, and on whether or not a diagnosis had been reached.

All patients were asked about epidemiologic aspects: dietary exposure during the previous week (raw fish, eggs, or sauces), recent travel to countries with poor sanitary conditions, similar cases in the family, treatment with oral contraceptives or NSAIDs, previous diagnosis of tuberculosis, family history of IBD, and appendectomy performed previously.

We performed the following protocol.

At the first visit to the A&E Department, and in addition to a standard clinical work-up and surgical evaluation, tests included serum biochemistry (sodium, potassium, creatinine, alanine aminotransferase, aspartate aminotransferase, bilirubin, amylase, glucose, and total protein levels), serum C reactive protein level, complete blood count, β-human chorionic gonadotropin (in fertile women), urinalysis, erythrocyte sedimentation rate (ESR), simple abdominal and chest radiograph, collection of clinical samples (stool ova and parasites, stool culture, and blood cultures), and an imaging technique (US or CT) necessary for the diagnosis.

At the second visit, 2 weeks after the first clinical presentation, biochemistry, complete blood count, ESR, and C reactive protein levels were repeated in our Gastroenterology Outpatient Clinic; evaluation was completed with other tests, such as serum cyanocobalamin, folic acid and iron, Salmonella and Yersinia serologies, Anisakis-specific immunoglobulin (Ig)E, tuberculin skin test, abdominal US or CT (whichever had not been performed in the A&E Department), barium intestinal follow-through and colonoscopy with ileoscopy (both only if clinically indicated by the persistence of symptoms, such as pain or diarrhea or by the onset of other symptoms such as weight loss or alterations in analysis, and provided a diagnosis had not been reached with the first set of tests).

The third visit, 4 weeks after the first clinical presentation, again included biochemistry, complete blood count, ESR, and C reactive protein, serum cyanocobalamin, folic acid, and iron levels, a second sample for Salmonella and Yersinia serologies, and for Anisakis-specific IgE, a follow-up abdominal US, and a gynecologic consultation in females (if the results of the previous tests or the clinical evaluation made it advisable, or if no alternative explanation had been identified by that point).

Fecal samples were processed with culture into the following media: selenite broth, peptone water, gelose specific for Salmonella and Shigella, McConkey Agar, selective Yersinia medium, and selective Campylobacter medium. Yersinia serology was performed by the agglutination method (Bio-Rad Laboratories, Marnes La Coquette, France). Patients with an antibody titer against Yersinia enterocolitica serotype O3 of 80 or greater or against serotype O9 of 160 or greater were registered as positive.17 Salmonella serology was performed by agglutination test (Cromatest; Linear Chemical, Barcelona, Spain). A simplex-specific IgE was performed by the CAP-FEIA technique (Phadia, Sant Cugat, Spain) and considered positive if titer exceeded 0.35 kU/L. Blood cultures were processed by the BACTER 2000 system (Becton Dickinson, Franklin Lakes, NJ).

Data Analysis

A descriptive statistics analysis was performed (SPSS 16.0, Chicago, IL), in which absolute and relative frequencies were used for categoric variables, and means and standard deviations or medians and interquartile ranges were used for continuous variables. We used the chi-square or the Fisher exact test to compare categoric variables and the Mann–Whitney test for continuous variables. A P value of less than .05 was considered statistically significant.

Results

A total of 66 patients were diagnosed with AI in the aforementioned period (Table 1). This represents 0.033% of patients seen in the A&E Department in the same lapse of time. The clinical characteristics of patients are detailed in Table 1. In addition, it is noteworthy that 43.2% of women of fertile age (15–49 y) were on oral contraceptives, a value higher than the one reported for the Spanish population (18.3%).18

The results of principal diagnostic procedures are shown in Tables 2 and 3. In a majority of patients, the diagnostic imaging test leading to the diagnosis of AI was an abdominal US. This probably is owing to the different times at which the examinations were performed: although US almost always was performed in the
A&E Department, a CT scan generally was performed at the initial follow-up visit. A final diagnosis was reached in 40 (60.6%) patients. In the remaining patients the diagnostic protocol either was negative, disclosed only nonspecific mild changes (18.2%), or had to be interrupted because of the complete remission of symptoms (15.2%); 4 (6.1%) patients abandoned follow-up evaluation before the examinations were concluded.

Twenty-one of 66 cases (31.8%) were admitted after the first visit to the A&E Department; 7 additional patients (10.6%) returned to the A&E Department before the protocol could be completed, which was achieved during admission in 4 of these patients (57.14%). In 4 patients (6.06%) the diagnosis was reached by explorative laparotomy.

The cause of AI was infectious in 22 (33.3%) patients, followed by new-onset CD in 8 (12.1%) patients, gynecologic conditions mimicking ileitis in their presentation in 6 (9.1%) patients (14% of women), and intestinal lymphoma, congenital union of intestinal loops, perforation of a colonic diverticulum, and acute appendicitis in 1 (1.5%) patient each. More specifically, considering the infectious ileitis, the causative agent was *Yersinia enterocolitica* in 9 (13.6%) patients, *Anisakis* in 6 (9.1%) patients, *Salmonella* in 5 (7.6%) patients, *Aeromona* in 1 (1.5%) patient, and *Amoeba* in 1 (1.5%) patient. Gynecologic conditions that mimicked ileal inflammation and led to a suspected diagnosis of AI were 4 cases of ruptured ovarian cysts (1 dermoid)

### Table 1. Characteristics of Patients With Suspected AI

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age, y&lt;sup&gt;a&lt;/sup&gt;</td>
<td>35.39 (19)</td>
</tr>
<tr>
<td>Sex&lt;sup&gt;b&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>43 (65.15)</td>
</tr>
<tr>
<td>Male</td>
<td>23 (34.84)</td>
</tr>
<tr>
<td>Ethnicity&lt;sup&gt;b&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td>Caucasian</td>
<td>56 (84.8)</td>
</tr>
<tr>
<td>Native American (Latin)</td>
<td>9 (13.7)</td>
</tr>
<tr>
<td>Sub-Saharan African</td>
<td>1 (1.5)</td>
</tr>
<tr>
<td>Epidemiology&lt;sup&gt;b&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td>Percentage of fertile women on oral contraceptives</td>
<td>43.20</td>
</tr>
<tr>
<td>Previous appendectomy</td>
<td>10 (15.2)</td>
</tr>
<tr>
<td>Previous diagnosis of tuberculosis</td>
<td>3 (4.5)</td>
</tr>
<tr>
<td>Familial history of IBD</td>
<td>2 (3)</td>
</tr>
<tr>
<td>Previous similar symptoms</td>
<td>19 (28.8)</td>
</tr>
<tr>
<td>Dietary exposure during the previous week</td>
<td></td>
</tr>
<tr>
<td>Raw/smoked/marinated fish</td>
<td>16 (24.2)</td>
</tr>
<tr>
<td>Eggs/sauces</td>
<td>11 (16.7)</td>
</tr>
<tr>
<td>NSAID use</td>
<td>9 (13.6)</td>
</tr>
<tr>
<td>Recent travel to countries with poor sanitary conditions</td>
<td>4 (6.1)</td>
</tr>
<tr>
<td>Similar cases in the family</td>
<td>3 (4.5)</td>
</tr>
<tr>
<td>Season of presentation</td>
<td></td>
</tr>
<tr>
<td>Autumn–winter</td>
<td>30 (45.5)</td>
</tr>
<tr>
<td>Spring–summer</td>
<td>36 (54.5)</td>
</tr>
<tr>
<td>Clinical picture&lt;sup&gt;b&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td>Abdominal pain</td>
<td>65 (98.5)</td>
</tr>
<tr>
<td>Diarrhea</td>
<td>32 (48.5)</td>
</tr>
<tr>
<td>Fever</td>
<td>30 (45.5)</td>
</tr>
<tr>
<td>Vomiting</td>
<td>26 (39.4)</td>
</tr>
<tr>
<td>Weight loss</td>
<td>19 (28.8)</td>
</tr>
</tbody>
</table>

<sup>a</sup>Mean (SD) shown.

<sup>b</sup>Frequency (%) shown.

### Table 2. Main Findings in Abdominal Imaging Used in the Identification of Cases

<table>
<thead>
<tr>
<th>Abdominal Imaging</th>
<th>Number (Percentage)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abnormal</td>
<td>55 (83.3)</td>
</tr>
<tr>
<td>Thickened bowel wall</td>
<td>44 (66.6)</td>
</tr>
<tr>
<td>Disruption of bowel wall</td>
<td>24 (36.4)</td>
</tr>
<tr>
<td>Peri-ileal fluid</td>
<td>24 (36.4)</td>
</tr>
<tr>
<td>Local lymph node swelling</td>
<td>17 (25.7)</td>
</tr>
<tr>
<td>Fixed appearance of ileal loop</td>
<td>5 (7.6)</td>
</tr>
<tr>
<td>Normal</td>
<td>5 (7.6)</td>
</tr>
<tr>
<td>Abdominal CT scan</td>
<td></td>
</tr>
<tr>
<td>Abnormal</td>
<td>40 (60.6)</td>
</tr>
<tr>
<td>Thickened ileal wall</td>
<td>31 (47)</td>
</tr>
<tr>
<td>Ileal dilatation</td>
<td>10 (15.1)</td>
</tr>
<tr>
<td>Thickened ceecal wall</td>
<td>3 (4.5)</td>
</tr>
<tr>
<td>Thickened jejunal wall</td>
<td>7 (10.6)</td>
</tr>
<tr>
<td>Disruption of bowel wall</td>
<td>18 (27.3)</td>
</tr>
<tr>
<td>Peri-ileal fluid</td>
<td>12 (18.2)</td>
</tr>
<tr>
<td>Local lymph node swelling</td>
<td>17 (25.7)</td>
</tr>
<tr>
<td>Abdominal collection</td>
<td>5 (7.6)</td>
</tr>
<tr>
<td>Pneumoperitoneum</td>
<td>2 (3)</td>
</tr>
<tr>
<td>Normal</td>
<td>20 (30.3)</td>
</tr>
</tbody>
</table>

NOTE. Frequency (%) shown throughout table.

### Table 3. Main Findings in Tests Used in the Etiologic Diagnosis and Follow-Up Evaluation of Patients

<table>
<thead>
<tr>
<th>Test</th>
<th>Number (Percentage)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yersinia serology</td>
<td></td>
</tr>
<tr>
<td>Positive</td>
<td>9 (13.6)</td>
</tr>
<tr>
<td>Negative</td>
<td>53 (80.3)</td>
</tr>
<tr>
<td>A simplex-specific IgE</td>
<td></td>
</tr>
<tr>
<td>Positive</td>
<td>19 (28.8)</td>
</tr>
<tr>
<td>Negative</td>
<td>37 (56.1)</td>
</tr>
<tr>
<td>Tuberculin skin test</td>
<td></td>
</tr>
<tr>
<td>Positive</td>
<td>13 (19.7)</td>
</tr>
<tr>
<td>Negative</td>
<td>34 (51.5)</td>
</tr>
<tr>
<td>stool cultures</td>
<td></td>
</tr>
<tr>
<td>Positive</td>
<td>8 (12.1)</td>
</tr>
<tr>
<td>Negative</td>
<td>47 (71.2)</td>
</tr>
<tr>
<td>Barium intestinal radiograph</td>
<td></td>
</tr>
<tr>
<td>Abnormal</td>
<td>25 (37.9)</td>
</tr>
<tr>
<td>ileal inflammation</td>
<td>23 (34.8)</td>
</tr>
<tr>
<td>ileal stenosis</td>
<td>4 (6.1)</td>
</tr>
<tr>
<td>ileal dilatation</td>
<td>1 (1.5)</td>
</tr>
<tr>
<td>Fistula</td>
<td>1 (1.5)</td>
</tr>
<tr>
<td>Normal</td>
<td>29 (43.9)</td>
</tr>
<tr>
<td>Endoscopy</td>
<td></td>
</tr>
<tr>
<td>Abnormal</td>
<td>10 (15.2)</td>
</tr>
<tr>
<td>Edema</td>
<td>2 (3)</td>
</tr>
<tr>
<td>Erythema</td>
<td>5 (7.6)</td>
</tr>
<tr>
<td>Aphthae</td>
<td>1 (1.5)</td>
</tr>
<tr>
<td>Ileal ulcers</td>
<td>4 (6.1)</td>
</tr>
<tr>
<td>Stenosis</td>
<td>3 (4.5)</td>
</tr>
<tr>
<td>Normal</td>
<td>23 (34.8)</td>
</tr>
<tr>
<td>Histopathology</td>
<td></td>
</tr>
<tr>
<td>Abnormal</td>
<td>9 (13.6)</td>
</tr>
<tr>
<td>Intestinal MALT lymphoma</td>
<td>1 (1.5)</td>
</tr>
<tr>
<td>Acute mucosal ulceration</td>
<td>2 (3)</td>
</tr>
<tr>
<td>Nonspecific mixed inflammation</td>
<td>2 (3)</td>
</tr>
<tr>
<td>Compatible with CD</td>
<td>4 (6.1)</td>
</tr>
<tr>
<td>Normal</td>
<td>16 (24.2)</td>
</tr>
</tbody>
</table>

NOTE. Frequency (%) shown.

MALT, mucosa-associated lymphoid tissue.
and 1 case each of right tubo-ovaric abscess and hydrosalpinx after pelvic inflammatory disease.

Symptom duration before the first emergency room consultation was longer in patients eventually diagnosed with CD (median, 72 h; interquartile range, 36–420 h) than in the remaining patients (median, 24 h; interquartile range, 24–72 h), although this difference was not statistically significant ($P = .55$).

In a late follow-up evaluation 6 months after the initial diagnosis, 43 patients were contacted again and only 7 (10.6%) patients referred to a previous similar episode. Four of these patients eventually diagnosed with CD, 1 patient had a ruptured ovarian cyst, 1 patient had a Yersinia enterocolitica infection, and 1 patient abandoned the follow-up evaluation. None of the nonspecific cases had symptoms 6 months after the first consultation.

Statistical analysis did not show any relation between contraceptive exposure and a gynecologic cause ($P = .65$). Similarly, infectious causes were not more frequent in patients who had travelled to developing countries ($P = .17$) or in patients with exposure to homemade sausages and dressings containing eggs ($P = .67$). The only clinical factor that predicted a determined etiology was the existence of previous similar episodes, which was associated strongly with a final diagnosis of CD ($P = .02$): 6 of the 8 patients with a final diagnosis of CD had consulted the A&E Department for previous similar episodes. Two patients had a family history of IBD and both eventually were diagnosed with CD.

Acute phase reactants or blood count results (more specifically, leukocytes, hemoglobin, C-reactive protein, ESR, and fibrinogen), did not differ between infectious and noninfectious causes.

**Discussion**

The information about causes, incidence, diagnosis, and clinical approach to Al is remarkably scarce in the medical literature. One possible cause is that the condition could be difficult to isolate from other conditions with similar clinical presentations, such as nonspecific or functional abdominal pain, acute appendicitis, and so forth. The increasing availability of imaging techniques in the A&E departments has changed this situation, and Al is emerging as an important diagnostic tool.

The causes of Al are diverse and probably different from one part of the world to another. In our area, which corresponds to a university hospital in a Western country, we have found Al of different etiologies. We believe that the distribution of the causes should be fairly representative, although there probably are regional differences. For example, there was a high incidence of A simplex as an etiologic agent in our series, probably because Spain is a country with a high consumption of fresh fish. We also noted the incidence of CD in our environment; it was estimated to occur in 5 to 7 cases/10^5 people per year, which is similar to other surrounding countries. Ultimately, we do not claim that our findings are similar to those elsewhere, but we think that this protocol may serve as a diagnostic guide, including local adaptations.

In accordance with previous observations, infectious Al (and more specifically, bacterial Al) was, in our series, the most frequent diagnosis. In a series published in 1997 that collected 117 cases of infectious Al, it was concluded that Y enterocolitica serotype O3 was the microorganism involved most frequently, followed by C jejuni and S enteritidis. The absence of C jejuni in our patients is remarkable. A possible explanation would involve local differences in infection incidences. Also, any delay in the processing of fecal samples (as could happen with patients seen in the A&E department) would affect the isolation of this fastidious microorganism; some of the cases classified as nonspecific Al could have been caused by this agent. The typical clinical presentation of bacterial Al is preceded by acute RLQ abdominal pain, sometimes described as colicky, accompanied by fever and diarrhea, which usually follows rather than precedes pain. The clinical course is more indolent than that of acute appendicitis. Nevertheless, it remains one of the most transcendental differential diagnoses. The use of an imaging procedure (probably abdominal US) could be a valid approach to differentiate both conditions. Only one patient was diagnosed incorrectly with Al in our series; the immediate follow-up evaluation led to explorative laparotomy with a final diagnosis of acute appendicitis. A drawback to this approach is the frequent absence of diarrhea in the initial phases of infectious Al and the fact that fecal samples need 24 to 48 hours to be processed, which makes them unsuitable for the emergent differential diagnosis and adds value to the imaging techniques when deciding between surgical intervention or noninvasive management.

C jejuni is a well-recognized cause of Al and should be recalled in patients with RLQ pain, even more so if a positive history can be elicited of ingestion of raw, marinated, or smoked fish 48 to 72 hours before the onset of the clinical picture. A confirmation can be made only by the observation of the larva at endoscopy or in a resection specimen, whereas suspicion can be raised by the combination of a positive dietary history and the typical clinical, radiologic, and serologic data. Immunoserologic tests include the quantification in serum of total IgE and A simplex-specific IgE; nevertheless, this is a very sensitive, albeit nonspecific, determination, and 15% to 27% of healthy controls may show positive results. Asymptomatic sensitization is explained by the widespread fish consumption and the high index of infection of fresh fish by A simplex,
as well as by cross-reactions with other nematodes. In our series, all diagnoses of anisakiasis were presumptive if they were made on the basis of the immunoserologic test; no one was confirmed by pathologic inspection of a resected terminal ileum.

It has been reported that up to one third of all CD cases first consult for an episode of AI. The suspicion should arise on observing a combination of clinical and biochemical findings, imaging data, absence of alternative diagnoses, and the history of preceding episodes. But surely the most important diagnostic clue is the evolution of the disease, which allows diagnosis in a majority of cases.

It is important to mention that gynecologic causes of RLQ pain could mimic AI. They make up a significant percentage of our cases, which points to the importance of a proper gynecologic evaluation, mainly in women of fertile age. We observed 6 cases that were clinically compatible with ileitis and in which imaging techniques disclosed signs of possible ileal involvement, but finally were identified as having gynecologic origin. Whether these are false-positive findings of imaging techniques or true ileal inflamations caused by close proximity to the gynecologic organs remains to be established.

Exposure to different drugs can induce iatrogenic ileitis. The most important ones are NSAIDs, although they generally only determine asymptomatic ileal inflammation. These lesions respond to the discontinuation of the drug and reappear on rechallenge. We were not able to diagnose any one of our cases, which points to the importance of a proper gynecologic evaluation, mainly in women of fertile age. We observed 6 cases that were clinically compatible with ileitis and in which imaging techniques disclosed signs of possible ileal involvement, but finally were identified as having gynecologic origin. Whether these are false-positive findings of imaging techniques or true ileal inflamations caused by close proximity to the gynecologic organs remains to be established.

In our experience, the highest diagnostic yield for an imaging procedure corresponds to abdominal US; it has to be noticed, however, that the readiness with which US is available at bedside (as opposed to CT) makes it the right test at the right place and time, which surely enhances its diagnostic capacity. An abdominal CT scan normally was performed only 2 weeks after the clinical onset; in many cases morphologic alterations could have resolved by that time. CT scan is probably a better technique, if both were available with the same readiness. As an example, the sensitivity of US for the diagnosis of acute appendicitis (the most important differential diagnosis) is between 75% and 90%, its specificity is between 86% and 100%, and its positive predictive value is between 89% and 93%, whereas CT has a sensitivity of 90% to 100%, a specificity between 91% and 99%, and a positive predictive value of 95% to 97% in the same setting.

Depending on the environment, the availability of the diagnostic method may be different. We believe that this does not invalidate our findings because the diagnostic ability of either technique is not significantly different.

Clinical surveillance appears to be relevant for the diagnosis of AI. It is important not to diagnose IBD too easily, but also not to omit it in the differential possibilities. In our experience, all patients with a final diagnosis of CD had either experienced previous episodes or suffered them during the follow-up evaluation; the combination of previous episodes of RLQ pain and the presence of a family history of IBD seems to have a high predictive value for ileal CD. A recent investigation followed up for 5.8 years a group of 28 patients with discrete scattered ileal aphthae found during an otherwise normal colonoscopy, indicated for the investigation of mild diarrhea. Only 8 patients (29%) went on to develop CD. We conclude that early Crohn’s lesions cannot be differentiated easily from self-limited ileal aphthae, making clinical observation mandatory.

In conclusion, AI accounts for 33 of 100,000 consultations in the A&E department of our university hospital. The identification of a cause of AI after applying a structured diagnostic protocol was reached in more than 60% of cases. The main cause identified was bacterial infection. CD has to be kept in mind but is responsible only for a minority of cases, usually associated with recurrence and/or the presence of a familial history of IBD.

References


**Reprint requests**
Address requests for reprints to: Dr Elena Garrido, MD, Gastroenterology Department, Hospital Ramon y Cajal, Cra Colmenar K9.100, E28034 Madrid, Spain. e-mail: elenagarridogomez@hotmail.com; fax: (34) 913368771.

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**Conflicts of interest**
The authors disclose no conflicts.